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ABSTRACT

This report describes recent progress towards the provision of SDI services, current awareness bulletins, and retrospective search facilities to the potential users in Australian industry. Particular emphasis is placed on the role of periodical literature, reports, and patent literature. A list of information bulletins available from the Australian National Library in the areas of science and technology, overseas reports, medicine, and biological sciences is included. (Author/KP)

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DEVELOPMENT OF RESOURCE SHARING NETWORKS

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NETWORKS STUDY NO. 6

TOWARDS AN AUSTRALIAN INDUSTRY INFORMATION NETWORK

Canberra
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PREFACE

By Dr. G. Chandler, Director-General, National Library of Australia

The importance to the development of Australian industry of information services of a high standard was clearly recognised by the Scientific and Technological Information Services Enquiry Committee and it is in the light of that Committee's findings that the planning and development of the industrial information services described here are taking place. The STISEC Report, published in 1973, observed that 'computerised selective dissemination of information (SDI) services, current awareness bulletins and retrospective search facilities are not readily available to the great majority of the potential users' and concluded that 'the lack of such facilities is a real impediment to the development of Australian industry and should be remedied'.

This report describes recent progress towards the provision of these services for industry, and in particular, services involving 3 classes of information materials, each of which is of key importance to industrial growth and prosperity - the world's periodical literature, report literature and patent literature. The financial and manpower restraints, which so closely govern so many of our affairs today, have placed a particular emphasis on the co-operative sharing of available resources. As a result, the services described here, which are either available now or are being actively developed, are the outcome of extensive discussions and joint operational development by the Departments of Defence and Productivity, the Australian Atomic Energy Commission, the Commonwealth Scientific and Industrial Research Organization, several industrial organisations and the National Library. Any views or suggestions that users may wish to make about these co-operative ventures will be welcomed by the National Library.

INTRODUCTION: ANSTEL and Industry

By Bryan Yates, Assistant Director-General (Science and Technology)

The provision of information services to industry is one of the service priorities of the National Library's science and technology branch, ANSTEL - the Australian National Scientific and Technological Library. In its endeavours to plan, promote and develop the services required by Australian industry, ANSTEL established a liaison committee involving representatives of those who could co-operatively contribute in the provision of services as well as of user groups.

The industry network liaison committee has examined certain of the information needs of the industry sector and has developed strategies to meet them. The work of the committee is reviewed in this report which has been prepared by the committee's convenor, Mr. H.J. Zwillenberg who is Director of the Industry Section of ANSTEL. It has been thought useful to make the report available in this form so that a wide range of the potential users of these services may be aware of the developments themselves as well as of the co-operative framework in which they are being made.

As resources permit, the liaison committee will consider ways of meeting other information needs of industry, such as information analysis centres and user education schemes.

In addition to the specialised services to industry outlined in the report, ANSTEL provides such other services as

- ready access by loan or photocopy to scientific and technological publications
- selective dissemination of information (SDI) and retrospective search enquiries using computer based information services
- reference and referral inquiries.

In providing these services ANSTEL also acts as a link between the Australian network of scientific and technological information services and similar foreign and international networks.

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1. INTRODUCTION

1.1 A national conference held on 11 February 1976 at the National Library of Australia and opened by Senator the Honourable R.G. Withers, the Minister responsible for the National Library, endorsed the principle of resource sharing for the provision of information services.

1.2 This paper illustrates some of the results achieved since that meeting by employing a co-operative resource sharing approach. The magnitude of the task of providing information services appropriate to today's needs is such that, especially in the prevailing economic climate, no single organisation can provide these on its own.

1.3 To find a solution to the problem, the concept of an Australian Industry Network was created. The characteristics of this network, including its freedoms and constraints, objectives and functions, were embodied in a tentative functional specification (National Library of Australia : networks study no. 3). The tasks that could derive from this functional specification were discussed on 30 July 1976 by representatives of industry, Commonwealth departments, statutory instrumentalities and the National Library, who formed themselves into an Industry Information Network Liaison Group. As a result, a number of priority tasks were identified and 4 task teams were constituted in a voluntary fashion, convened by the Industry Section of ANSTEL within the National Library.

1.4 These task teams were:

Task Team A: Publicity

Representatives: Australian Atomic Energy Commission
Commonwealth Scientific and Industrial Research Organization
Department of Productivity
Metal Trades Industry Association
National Library of Australia

Task Team B: Co-operative Current Awareness Bulletins for Industry

Representatives: Commonwealth Scientific and Industrial Research Organization
Department of Productivity
National Library of Australia

Task Team C: Co-operative Current Awareness Overseas Reports Announcements

Representatives: Australian Atomic Energy Commission
Australian Consolidated Industries
Department of Defence
Department of Productivity
National Library of Australia

Task Team D: Australian Reports Data Base

Representatives: Australian Atomic Energy Commission
Broken Hill Proprietary Company Ltd.
Commonwealth Scientific and Industrial Research Organization
Department of Defence
Department of Productivity
Department of Science
National Library of Australia

1.5 The voluntary nature of these efforts cannot be over-emphasised. The efforts of these task teams have resulted in the creation of information services in which the participants contribute such resources as are within their existing capabilities.

1.6 In all of these projects the National Library is one participant amongst the total and all design details and implementation procedures were arrived at on the basis of consensus. However, the National Library was seen as a convenient focal point for convening and harnessing the effort made available voluntarily by others.

2. PUBLICISING OF INFORMATION SERVICES

2.1 The major problem in utilising the vast amount of scientific and technical information available to the public in Australia is the lack

of awareness that these resources exist. Institutions with experiance in providing information services all reinforce this view. Many of those engaged in medium and small industries are not even aware of the advantages they can gain by utilising such information sources. Academics and research workers, in industry and in the public sector, are also very often unaware of sources that they could approach, sources which might provide both necessary solutions to ongoing problems and stimulate thinking for future developments.

2.2 All participants agreed early that the promotion of these services requires a never-ending effort to find means to keep an awareness of information resources constantly before the public eye.

2.3 Production and wide distribution of appropriate directories was, therefore, one of the first projects; this was considered by Task Team A. These directories would facilitate approaches to the appropriate sources or contacts by those seeking information on traditional library services, computerised library services, referral or consultancy facilities.

2.4 The most obvious task was the compilation of the first list of computerised services available from various sources in Australia. This list was published in October 1976 as National Library of Australia, networks study no. 4. It lists under 18 subject headings some 58 data bases which can be interrogated in a retrospective search or an SDI mode to produce listings of recorded knowledge in many areas of endeavour. The Networks study was distributed widely: over 2000 copies were distributed into various user areas. The study includes information supplied by the 9 agencies in Australia at present providing computerised library-based information services to the public at large.

2.5 The Liaison Group saw as its next publication a generalised Directory of Technical Information Sources for Industry, to provide information about the people that may be contacted in various organisations, the services and terms of access their organisations offer, their subject specialties and the strengths of their services.

2.6 This project is complementary to the CSIRO Index of Scientific and technical research centres in Australia (STRCA). Another publication aimed at providing ongoing information about unique research projects might be compiled jointly by CSIRO and the Department of Science.

2.7 Task Team A, which is to carry out this directory project, is distributing the first set of questionnaires to obtain information on 2500 - 3000 information sources in Australia. The relevant information will then be incorporated in the formalised directory, the first issue of which, the Task Team hopes, will be available late in 1977.

3. CURRENT AWARENESS BULLETINS IN TECHNOLOGY

3.1 An inspection of the publication Networks study no. 4 readily highlights the range of subjects in the rapidly growing literature of technology on which the data bases available in Australia provide references. If one allows for an overlap of, say, 30 per cent between some of these data bases, it can be shown that every year about 3 million references are added to the world's literature in the fields covered by these data bases. Task Team B saw current awareness bulletins as an effective method of making this literature more readily accessible and at the same time making technologists and research workers more aware of the availability of literature in their fields.

3.2 Organisations concerned with the transfer of recorded knowledge have the task of making known the existence of new recorded information. Computerised data bases afford a most practical means of producing current awareness bulletins. By using them in this way, the data bases are also employed in providing service to a group that would otherwise not make a substantial call on them.

3.3 Current awareness bulletins usually aim to satisfy a comparatively large clientele and cover fairly broad topics. As a result, their precision is somewhat lower than, for instance, normal SDI services; the recall is only limited by the number of entries in the data base that correspond to broad headings or by arbitrary limits such as the maximum size of the bulletin.

3.4 In Task Team B, the National Library collaborated with the Departments of Defence and Productivity and later with CSIRO to investigate the technical and economic feasibility of co-operatively producing current awareness bulletins from two or more serials data bases for the use by public and private organisations concerned with the management and operation of industrial enterprises. The data bases selected for the study were Science Citation Index (SCI), Engineering Index (COMPENDEX) and Science Abstracts Series B and C (INSPEC). Metals Abstracts Index (METADEX) was identified as a data base to be included in the future.

3.5 The aim of the Joint Feasibility Study was:

> 'To determine the technical and economic feasibility of co-operatively producing current awareness bulletins from two or more serials data bases for the use by public and private organisations concerned with the management and operation of industrial enterprises'.

Such current awareness bulletins should desirably

- be easily readable
- not be too big - i.e. the number of pages should not exceed 10
- include abstracts wherever possible, but otherwise the entries should only contain a minimum of data
- be relatively cheap to produce
- require a minimum of human effort

3.6 A number of problems were associated with the investigation. The first arose from the intrinsic differences between the data bases. There was an overlap of the source journals covered by the data bases and the references cited. Crude checks carried out on a 10 per cent sample showed that, for instance,

33 per cent of journals covered by COMPENDEX were also covered by INSPEC

25 per cent of journals covered by INSPEC were also covered by COMPENDEX

28 per cent of journals covered by COMPENDEX were also covered by SCI.

3.7 No counts were taken of citations that were unique to any one of the 3 data bases. Terry and Olive suggested in 1974 (OSTI Report. 5210)

that one might expect 46 per cent, 50 per cent and 57 per cent of all citations to be unique in COMPENDEX, INSPEC and SCI respectively. Consequently, considerable duplication was to be expected, probably of the order of 30 per cent. However, since the data bases vary in their promptness of announcing citations – the delay in increasing order is SCI, INSPEC, COMPENDEX -- the problem of duplication was not considered to be significant. In fact, some merit was seen in this: a citation appears as a title entry first from SCI and is later followed by an abstract from INSPEC or COMPENDEX. This repitition might usefully reinforce an earlier impression.

3.8 The different processing methods of the data bases also presented problems. An ideal system would take sorted search tapes from the data bases and merge them into a common print format. The system would incorporate a sequential citation numbering system for ease of identification and would eliminate duplication. However, because the 3 tapes use different formats, this would have involved a major design and programming effort, which the limited purpose of the project did not justify.

3.9 Consequently, the Task Team from the outset appreciated that the data bases would have to be interrogated separately, namely SCI using the CAN/SDI system of the National Library, COMPENDEX using TEXTPAC on the Department of Defence machine or an IBM service bureau facility, and INSPEC using the CSIRO system.

3.10 The differences of these data bases, as far as the available facilities are concerned, are summarised in Appendix A.

3.11 The Task Team addressed itself to the following aspects:

(a) Bibliographic considerations
  i. subject categorisation
  ii. testing of validity of categorisation
  iii. profile construction (grouping of suitable terms)
  iv. assessment of back-up facilities

(b) Technical problems
  i. processing methods (computer operations)
  ii. format of output
  iii. production of output
  iv. systems procedures

(c) Administrative aspects

i. compilation of suggested initial mailing lists

ii. costing of the proposed service

iii. charging policy

iv. user liaison – principles and responsib ilities.

3.12 The question of subject categorisation received substantial attention and further refinement may still be required. The need for broad subject categories arose from the general considerations that the user should receive only the broad sections of direct interest to him and that the amount of material reported to him at any one time should be small. The Team constructed a series of SCI profiles, translated them into COMPENDEX profiles and then grouped these profiles into a number of categories.

3.13 The 62 initial test profiles aimed at finding out:

(a) the approximate amount of relevant material which could be anticipated each month

(b) the coverage of the topic

(c) the level of material covered, i.e., theoretical or practical

(d) the suitability of the topic for searching on the data base

(e) possible sources of irrelevance and appropriate corrective methods.

For these reasons, the initial profiles were written as broad comprehensive searches designed for high recall with a corresponding high irrelevance in some cases.

3.14 Examination of the output from several of these runs, noting particularly causes of retrieval of irrelevant items, revealed that modifications to th profiles were necessary. It should be noted that, because of the general nature of current awareness searches, SCI's unique facility for citation searching was not used; nor was the author approach considered useful. Consequently, the 2 main types of terms used were title words/phrases and journal CODEN/abbreviations. After consideration of all 62 profiles, 10 topics were selected for SCI, in some cases, by amalgamating several related searches.

3.15 The first COMPENDEX profiles were matched against the October 1975 COMPENDEX tape. Lack of time and the large output prevented any close checking of results. Thirty-nine of the 58 profiles were cut off at the imposed limit of 100 documents, as distinct from the SCI profiles, which were run through.

3.16 As expected, a number of irrelevant items were retrieved from the occurrence of terms in the abstracts. Of the small samples almost all were retrieved on terms which indicated the use of subject headings and/or possibly, but only possibly, Card-A-Lert categories (a mission-oriented subject categorisation introduced by Engineering Index) as a more appropriate method of profiling for COMPENDEX.

3.17 The noise pattern, which provides a crude indication of what normally is understood as relevance, varied in COMPENDEX from the pattern that showed up in SCI. It was found that 2458 SCI citations had to be culled from 3309 recalled and that, out of 1500 COMPENDEX citations, 803 were found to be noise. In terms of time, it was found that less than half the time was required to cull the 74 per cent prima facie noise out of the SCI printout than the 53 per cent of the COMPENDEX printout.

3.18 This pointed to the need to restructure the COMPENDEX profiles, as had to be done with the original SCI profiles. In both instances, some of the subject areas, judged to be applicable only to a very few, highly-specialised industries, were eliminated. The schedule of the final 10 macroprofiles is attached as Appendix B. Subsequently, the semi-conductors and packaging profiles were eliminated from the COMPENDEX and INSPEC searches respectively.

3.19 Although beyond the terms of reference of the Working Party, these profiles were also matched against a sample METADEX tape, for possible future extension of the service to this data base.

3.20 The following changes were made to the standard printouts from the 3 data bases

(a) The COMPENDEX data fields mentioned in Appendix A, paragraph 11, were eliminated and the entry was 'closed up'. This resulted in a 30 per cent saving in the total volume of COMPENDEX printout.

(b) The SCI printout normally produced on yellow cards, was printed out on white computer stationery, however, owing to the programming effort involved the present 20 entries per page was achieved by a manual procedure accomplished by 'shingling up' the entries.

(c) In the INSPEC printout, keywords, publication type, CODEN, INSPEC volume and abstract number and sectional classification, all of which appear in the printed abstract, were suppressed; the print size was also reduced to fit A4 size paper.

3.21 The initial list of recipients was compiled by selecting from directories 5 firms for each of the 10 categories. Subsequently, this was widened so that eventually about 800 recipients were sent the bulletins, 20 per cent received all 10 categories and 80 per cent received 4 or less.

3.22 From July 1976 onwards, recipients were sent a questionnaire designed to evaluate the service. In addition, a number of letters were received expressing judgements on the value of the bulletins. Recipients were also asked to keep a record of the number of source documents from each bulletin that they requested and obtained. The cut-off data for the questionnaire was 22 February 1977.

3.23 The following is a summary of the responses made to the questionnaire

(a) interest value: low 38 per cent, medium 41 per cent, high 16 per cent
(b) publication frequency: just right 65 per cent
(c) number of citations in each issue: too low 9 per cent, just right 55 per cent, too many 11 per cent
(d) success in obtaining items sought: low 7 per cent, medium-high 47 per cent.

The percentages do not add up to 100 per cent because not all respondents answered every question.

3.24 The questionnaire also sought to determine if recipients were only interested in articles that related to their current activity. Respondents thought that 1996 of the 5900 citations announced over the evaluation period were of interest. Of those citations,

60 per cent related to the current activities of the recipients; the lowest current activity interest (44 per cent) occurred in the energy and fuel category and the highest (79 per cent) in the categories of materials handling and semi-conductors.

3.25 It was not considered to be useful to undertake a comparison of the cost-effectiveness of the bulletins with that of other current awareness services until the bulletins have been available for a considerably longer period.

4. OVERSEAS REPORTS ANNOUNCEMENTS

4.1 The available overseas literature in science and technology consists to a large extent of research reports describing developments in technology often brought about by government sponsorship. The two foremost data bases in this respect are the Government Research Announcements produced fortnightly by the United States Department of Commerce, National Technical Information Service (NTIS) and the International Nuclear Information System (INIS) produced in Vienna by the International Atomic Energy Agency. These services announce at regular intervals the existence of report material in various fields of endeavour. Such announcements run ahead of publication of the work in standard journals, if it is published at all. The National Library of Australia is co-operating with the Departments of Productivity and Defence and the Australian Atomic Energy Commission (AAEC) to produce a current awareness bulletin based on the INIS and NTIS data bases. It may be noted that the Department of Productivity and the National Library together hold in microfiche form, 90 per cent of the reports covered by the 2 data bases.

4.2 When Task Team C looked at the feasibility of producing such a current awareness bulletin it found, not surprisingly, that the 2 data bases were dissimilar in several respects, and in their subject arrangements in particular. Also the NTIS data base uses 2 forms of subject break-up: COSATI categories, which are primarily defence oriented, and SRIM categories, which are not. As a result, the Task Team developed a categorisation consisting of 49 groupings with, as nearly as possible, analogous material from both data bases.

4.3 The Task Team decided to use the Department of Defence system (ADSATIS), which had been developed by the then Department of Supply for the Australian defence community. One reason for this choice was the system's extreme flexibility, which, in particular, permitted the output to be produced in a variety of formats. The ADSATIS system could not, however, reproduce the special print chain facility to accommodate the special characters and symbols which appear in some highly theoretical articles in the nuclear energy field. As a result, it was decided to drop entries which required these special facilities.

4.4 It was also found that the INIS primary report numbers were not being clearly identified during the conversion to the ADSATIS master file format; that is, the data resolution was not reproduced as readily as was deemed necessary. After some investigation, program changes were carried out to isolate the primary report number.

4.5 Modifications to the INIS entries (see paragraph 4.6) sometimes produced abbreviated entries that were meaningless. This occurred particularly in the category termed 'Administration', where entries often indicate that the item deals with, say, 'Annual Report' without identifying the organisation responsible. Since this category appears to collect all sorts of entries that are not particularly relevant and because modification of the program would have been cumbersome, it was decided to delete the category altogether.

4.6 The INIS input was modified by the Department of Defence and the AAEC so that it could be readily merged with the ADSATIS system and run by the WRE computer to produce a final printout. Appendix C shows a simplified flow chart of the operation. A number of runs were carried out on the same set of data bases to ascertain the costs of reproducing current awareness bulletins in some of the 49 categories. It was found, not surprisingly, that to do the work most cheaply, all entries had to be shorn of both abstracts and subject indicators.

4.7 In addition, it was necessary to indicate the availability of the original source material. The National Library subscribes to some categories of reports not taken by the Department of Productivity. Their availability is shown by prefixing the report number with NLA or TIC, TIC standing for the Technical Information Centre maintained by the Department of Productivity at Collingwood, Victoria. The TIC collection is maintained for 2 years only, after which holdings are transferred to the National Library.

4.8 It was originally thought that only material actually available in this country should be announced, but the Task Team decided that the service should provide details of all information in the data base and therefore microfiche not in the standard price range or available by bulk deposit purchase was also to be announced. Such entries are prefixed by NTIS, indicating that interested persons must go directly to NTIS.

4.9 Duplication, which occurred when merging some of the tapes, was another difficulty. This duplication meant that the same entry was listed twice in succession, and occurred frequently where entries referred to COSATI category 13 (Mechanical, Industrial, Civil, and Marine Engineering), to which both the National Library and TIC subscribe. Further modifications to the system were made so that in these cases only the TIC holding is announced.

4.10 Prototypes of the bulletins have been produced and operational production is expected to commence in July 1977.

5. AUSTRALIAN INDUSTRY REPORTS DATA BASE

5.1 The concept of an Australian Industry Reports Data Base arose from the widely acknowledged fact that a significantly large amount of recorded knowledged, generated in Australia and relating to the technological activities of this country, is not readily accessible to potential users with legitimate interests.

5.2 Existing services in this field, while partially meeting the requirements of industry, technology-oriented government agencies and tertiary institutions, suffer from certain limitations that are either of a bibliographical nature or have to do with organisational or statutory constraints. These constraints have been recognised for some time and, when the concept of networking and resource sharing gained ground, some groups in Australia began to create specialist report data bases. Two examples might be mentioned here: the ADSATIS system, referred to in paragraph 4.3, and the geosciences data base created co-operatively by organisations in the mining and mineral exploration fields and managed by the Australian Mineral Foundation.

5.4 In order to create a reports data base within the boundaries of the Australian Industry Information Network, Task Team D accepted a functional specification which, after certain modifications, served as the basis for the system which will now be described.

5.5 The Task Team agreed that the aim of the project should be stated as follows:

> 'To support the transfer of appropriate technical information in report form to individuals and organisations by:
>
> (a) obtaining, creating, maintaining or otherwise arranging access to sources of published and unpublished reports of Australian origin made available, co-operatively and voluntarily, by organisations and individuals working in the fields of science and technology which relate to industry
>
> (b) providing current awareness and retrospective search facilities in respect of such reports
>
> (c) providing means of repackaging bibliographic details of such reports into major national and international bibliographies.'

5.6 The Task Team also decided on the following definition of what constituted a report for the purposes of the project:

> 'A report is a document which formally states the results of or progress made with research and/or development investigations which where appropriate draws conclusions and makes recommendations and which is initially submitted to the person or body for whom the work was done (BS 4811: 1972).'

The definition is deemed to include records of work done of a developmental or operational or administrative nature, or which deals with economic or environmental or social matters as they concern the people or organisations compiling the document. For the purposes of the Australian Industry Reports Data Base, conference papers, final-year honours and higher-degree theses, and preliminary reports existing in single copy only are also deemed to be covered by this definition.

5.7 The objectives of the system are:

(a) to create, co-operatively, a master file in machine-readable form which consists of reference entries (bibliographic descriptions and availability) to reports pertaining to Australian science and technology with a bearing on industry

(b) to use such a master file for the provision of

i. current awareness listings
ii. retrospective search facilities
iii. SDI facilities, if rate of input warrants them
iv. special listings.

5.8 Participation in this project will be sought from:

(a) public instrumentalities
(b) commercial/industrial organisations
(c) appropriate sectors of tertiary educational institutions (universities, CAEs).

5.9 Report announcements which appear in similar systems already operated in Australia by other bodies, such as the Department of Defence, CSIRO, and the Australian Mineral Foundation, could also be included. In order to accommodate particular circumstances, participants may be selective about input and withhold details of any document they consider not appropriate for the purposes of the project.

5.10 The Task Team accepted the concepts of decentralised input and decentralised location of source documents. The Team also decided that the system will be based on the ADSATIS system (referred to in paragraph 4.3), and will provide organisations participating in the project with listings which may be accessed under:

(a) personal author(s)
(b) issuing organisations (corporate authors, sponsoring and distributing agencies)
(c) descriptors and broad subject categories
(d) regional holdings (availability).

5.11 It is envisaged that the following listings may be made available, both to participants and to others, in printed form or as microfiche:

(a) main Australian report index
(b) periodic current awareness listings
(c) periodic cumulations.

5.12 The benefits that the participants in the scheme may expect to gain are:

(a) knowledge of the existence of reports that have been written in their areas of interest
(b) information on where copies of these reports may be obtained
(c) special listings of their own holdings
(d) retrospective search and SDI facilities.

5.13 A special benefit, which may be of particular interest to smaller organisations, will be the availability of bibliographic control tools, such as printed catalogues for their own libraries of Australian report material. Similarly, organisations may also use the system for controlling the report material that they produce themselves; these special listings would carry announcement and release limitations applying to other organisations, and entries so limited would not appear in any of the general listings.

5.14 The Task Team has agreed that the Industry Section of ANSTEL should convene and administer the project and have oversighting of its technical aspects. Output from the system will be available when about 3000 entries have been processed into the data base.

5.15 At the time of writing, a number of companies and tertiary educational institutions have indicated a willingness to co-operate in the project. Technical details of the system have been settled to a large extent; these will be substantially similar to those of the ADSATIS system. The Department of Defence has agreed to provide computer facilities for the data base for 12 months, after which assistance will be given to transfer the system to the National Library's IBM 370/168 computer. It is expected that a systems procedure for data input will be distributed in mid-1977 and data collection should commence in July 1977.

6. SELECTIVE DISSEMINATION OF PATENT INFORMATION

6.1 The STISEC report published in 1973 indicated that there was a need in industrial organisations and research institutions for up-to-date knowledge on the most recent patent information. To meet this need,

the Industry Section of ANSTEL has come to a co-operative resource sharing arrangement with the Patent Office of the Department of Productivity to utilise the international INPADOC data base.

6.2 INPADOC, the International Patent Documentation Centre, was founded in Vienna in May 1972 as a limited liability company wholly-owned by the Austrian Government. It aims to provide a central index to all patent documents of co-operating states, and to make information available from the data base. At present there are 41 co-operating countries including the U.K., U.S.A., U.S.S.R., Japan and Australia, with some 80 per cent of the world's patent literature being covered.

6.3 A trial programme was initiated in December 1976 to test the feasibility of disseminating patents information from INPADOC. A small sample of initial participants were asked to submit profiles of patent interests for inclusion in the trial programme. These requests were translated into the International Patent Classification and checked against periodic output lists compiled from the INPADOC data base. Users are supplied with lists of the patent numbers grouped under the classification codes selected for their request.

6.4 An evaluation of the feasibility of providing patent abstracts of English-language patents has commenced, as it is well recognised that without them the information supplied cannot be evaluated without reference to patent specifications.

6.5 The service is still very much in the trial stage and difficulties in providing search information, interpreting users' requirements and organising collections of patent material in Australia are still being discovered and solved. However, much valuable information has been gained and much of it is proving useful in improving other services provided by both the Patent Office and the National Library.

APPENDIX A

SUMMARY OF DIFFERENCES BETWEEN SCI - COMPENDEX - INSPEC

(1) All data bases are in a different format.

(2) COMPENDEX contains authors, citations, abstracts and descriptors, both direct and related etc., SCI records contain authors, titles, citation, author affiliation, cited references, CODEN and language.

(3) COMPENDEX can be interrogated through descriptors (subject headings) in addition to title words and words appearing in the abstracts; SCI can be interrogated, basically, through words appearing in title, and through cited article. The existing facilities do not allow use of cited journal. Both can be accessed through CODEN (Serial Title codes). Both can be accessed through an author approach. Normally the approach to COMPENDEX is via subject indicator and that to SCI via text words and cited article.

(4) Profiling for SCI must of necessity aim at exhaustive listing of possible keywords. The same listing for COMPENDEX is likely to retrieve irrelevant material from searching the abstract. Searching can in fact be restricted to the same fields as occur in SCI but the process of translating becomes more complex, especially where long strings of terms are given. Such limitations would prevent the search of the fruitful field of subject headings or Card-A-Lert codes.

(5) Problems also arose in respect of CODENS: SCI uses the five-letter form of CODEN, COMPENDEX a six-character version. All CODENS had to be extended, if possible to match the COMPENDEX version for most efficient searching.

(6) SCI uses non-standard journal abbreviations which had to be checked and if necessary altered if they were to be as meaningful as those in COMPENDEX or in INSPEC.

(7) TEXTPAC has no provision for prefix truncation so some of the power inherent in SCI, for instance, was lost.

(8) COMPENDEX is issued at monthly and SCI at weekly intervals. The former contain about 2000 citations/month and the latter 10,000.

(9) SCI addresses itself basically to general science with a life science content of about 60 per cent, COMPENDEX addresses itself mainly to engineering.

(10) The COMPENDEX printout is on computer paper, 70 characters wide with varying depths, usually straddling two computer pages if all data fields are printed. The SCI printout is on two adjacent cards, each 57 characters wide with a fixed depth of 22 computer lines. Thus COMPENDEX printout can be reproduced on A4 paper only in a single column, whereas SCI can be reproduced on A4 paper in two columns, provided the Reference Numbers are guillotined off.

(11) The printouts from some of the data bases contain information superfluous for CAB purposes. In the COMPENDEX printout the following fields were considered superfluous:

i. tape entry number field
ii. printed Engineering Index entry number field
iii. CODEN (serial identification) field
iv. 'See also' references as shown in Engineering Index under main heading.

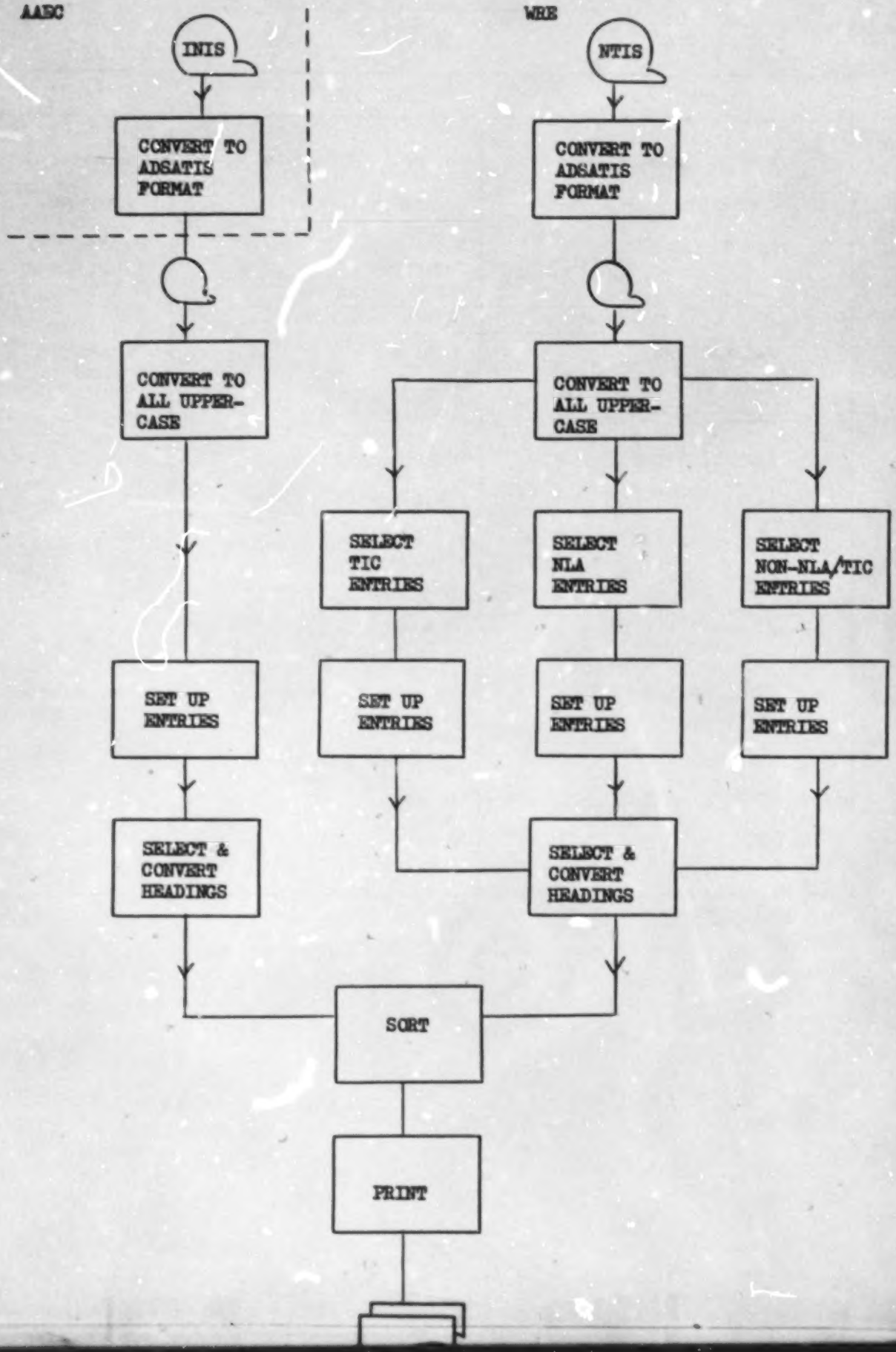
The deletion of the foregoing required that data fields be closed up.

(12) In the SCI printouts the last two lines at the bottom indicating reference to the ISI data base and entry number are not required. In addition there is a major blank space between the top part of the entry and the bottom lines. In order to make the required modifications to SCI, which includes a separate data set and a new print program, an estimated three man-weeks analysis plus a four man-weeks programming effort would have to be expended. One man-day would be required to eliminate the ISI tape number and feedback tab.

PROFILES AND PROFILE CATEGORISATION

0.	CATEGORY	COMPENDEX PROFILES	SCI PROFILES
1.	COMPOSITE MATERIALS	Composite Materials	Composite Materials
2.	CORROSION	Corrosion	Corrosion
3.	ENERGY AND FUEL	Natural Gas Solar Energy Energy	Natural Gas Solar Energy Energy Fuel
4.	MACHINE TOOLS	Machine Tools	Machine Tools Control
5.	MATERIALS TESTING	Materials Testing	Materials Testing
6.	MATERIALS HANDLING	Materials Handling	Materials Handling
7.	PACKAGING	Packaging	Packaging
8.	PLASTICS	Plastics - Blow Molding " - Extrusion " - Forming " - Molding " - Molds " - Thermo-forming	Plastics
9.	SEMICONDUCTORS	Semiconductor Devices " Diodes Transistors Integrated Circuits	Semiconductors Micro-electronics Transistors
10.	WELDING, BONDING, RIVETING	Welding Adhesives Riveting	Welding Adhesives

OVERSEAS REPORTS ANNOUNCEMENTS
COMPUTER PROCESSING



INFORMATION BULLETINS IN SCIENCE AND TECHNOLOGY AVAILABLE FROM THE NATIONAL LIBRARY

Since the completion of two of the investigations described in this report, two series of information bulletins have, on the basis of the experience reported, gone into regular production. These are the Science and Technology Series and the Overseas Reports Series. Two other series of bulletins, the Medicine Series and the Biological Sciences Series, are also available from ANSTEL. These bulletins are all issued monthly. If you wish to receive any of these bulletins, please forward $5.00 for each bulletin title for 1 year's service. ANSTEL can provide copies of listed documents which you cannot obtain locally. Please address your orders and enquiries to:

ANSTEL
P.O. Box E333
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Science and technology

S1. Abrasives, solvents and cleaners
S2. Aerosols
S3. Air pollution
S4. Aluminium
S5. Alternative energy
S6. Cement and concrete
S7. Ceramics and glass
S8. Engineering graphics and standards
S9. Environmental engineering: buildings
S10. Ergonomics
S11. Fibre optics
S12. Food additives
S13. Furnaces and foundries
S14. Insulating materials
S15. Lasers
S16. Lubrication and lubricants
S17. Noise pollution and control
S18. Novel sources of protein
S19. Polymers - fibres and films
S20. Powder metallurgy
S21. Protective coatings
S22. Rubber
S23. Ultrasonics
S24. Waste treatment
S25. Water pollution

T1. Composite materials
T2. Corrosion
T3. Energy and fuel
T4. Machine tools
T5. Materials handling
T6. Materials testing
T7. Packaging
T8. Plastics
T9. Integrated circuits
T10. Welding, bonding, riveting

Overseas Reports

R1. Communication Policy and Technology
R4. Solid State and Fluid Physics
R7. Ocean Technology and Engineering
R8. Natural Resources
R9. Electrotechnology
R10. Civil and Structural Engineering
R17. Computers, Control and Information
R20. Environmental Pollution Control
R21. Administration
R22. Materials Sciences A Metals and Alloys
R23. Materials Sciences B Other Materials
R24. Mathematical Sciences
R25. Non-destructive Testing, Photography and Recording Devices
R36. Transportation
R37. Building Technology
R38. U.S. Inventions for Licensing
R39. Urban Technology
R41. Industrial and Mechanical Engineering
R43. Business and Economics
R44. Energy
R45. Agriculture and Food
R46. General Chemistry
R47. Analytical Chemistry and Isotopic Analysis
R48. Photo, Radiation, Radio and Nuclear Chemistry
R49. Library and Information Sciences

Medicine

M1. Alcoholism
M2. Arthritis and rheumatism
M3. Asthma
M4. Cancer chemotherapy
M5. Cancer detection and diagnosis
M6. Congenital birth defects and teratogens
M7. Diabetes
M8. Disorders of speech and hearing
M9. Drug addiction and abuse
M10. Embolism and stroke
M11. Fertility and sterility
M12. Headaches and migraine
M13. Hyperkinesis
M14. Hypertension
M15. Nutrition and malnutrition
M16. Oral contraceptives
M17. Reproductive endocrinology
M18. Sudden infant death syndrome
M19. Thyroid disorders
M20. Epilepsy
M21. Occupational health
M22. Allergies
M23. Venereal disease
M24. Preventive dentistry
M25. Public health dentistry
M26. Dental caries and deposits
M27. Dental materials and equipment
M28. Orthodontics
M29. Livestock (veterinary aspects)
M30. Household pets (veterinary aspects)
M31. Applied psychology
M32. Social psychology
M33. Psychotherapy
M34. Nursing education
M35. Nursing care

Biological sciences

B1. Animal behaviour
B2. Animal breeding
B3. Animal feeds
B4. Aquaculture
B5. Blowflies
B6. Circadian rhythm
B7. Coral reefs
B8. Eucalypts
B9. Evolution
B10. Fish diseases
B11. Forestry & forest products
B12. Genetics - microorganisms
B13. Heavy metal pollution
B14. Marine mammals
B15. Marsupial biology
B16. Pest control
B17. Plant breeding
B18. Population genetics
B19. Reptile biology
B20. Root pathogens
B21. Soil conservation
B22. Wheat biology